



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,202	11/12/2003	Randall J. Huebner	ACM 352	8269
23581	7590	12/26/2007		
KOLISCH HARTWELL, P.C. 520 SW YAMHILL STREET, Suite 200 PORTLAND, OR 97204			EXAMINER CUMBERLEDGE, JERRY L	
			ART UNIT	PAPER NUMBER
			3733	
			MAIL DATE	DELIVERY MODE
			12/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/712,202

Applicant(s)

HUEBNER ET AL.

Examiner

Jerry Cumberledge

Art Unit

3733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-9,11,13-15,17-26,28 and 31-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-9,11,13-15,17-26,28 and 31-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The amendment filed 10/15/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The shoulder(s) flares generally toward the direction of advancement into bone.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-9, 11, 13-15, 17-26, 28 and 31-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lahille et al. (US Pat. 5,743,912) in view of McTighe et al. (US Pat. 5,653,765).

Lahille et al. disclose a method of compressing a bone, comprising: selecting a bone screw (Fig. 8, ref. 30) including a shank (Fig. 8, ref. 31) including a thread disposed externally for threaded engagement with bone (Fig. 8, ref. 30), the shank defining a long axis and a direction of advancement into bone (Fig. 8), and a head (Fig.

8, ref. 45) connected to the shank. The step of selecting a bone screw includes a step of selecting a bone screw in which the shank has a proximal portion adjacent the head and a distal portion spaced from the head, and wherein the thread is restricted to the distal portion (Fig. 8). The step of selecting a bone screw includes a step of selecting a bone screw that is self-tapping (Fig. 8). The step of selecting a bone screw includes a step of selecting a bone screw in which the shank includes a tip region configured to cut a hole in the bone as the bone screw is advanced into the bone (Fig. 8). The step of selecting a bone screw includes a step of selecting a bone screw in which the plurality of shoulders ledge structures have a corresponding plurality of diameters, and wherein the diameters decrease successively toward the shank. The step of selecting a bone screw includes a step of selecting a bone screw in which the head is shaped generally as a frustum of a cone (Fig. 8). The step of selecting a bone screw includes a step of selecting a bone screw in which the shank and the head define opposing ends of the bone screw and further define an axial bore extending between the opposing ends (Fig. 1, ref. 101). The step of selecting a bone screw includes a step of selecting a bone screw in which the axial bore includes a widened region configured to receive a tool that engages the head (Fig. 1, ref. 122). The step of selecting a bone screw includes a step of selecting a bone screw in which the head is rotatably and/or slidably connected to the shank (Fig. 8)(Fig. 7).

Lahille et al. disclose a method of compressing a bone, comprising: selecting a bone screw (Fig.8) including a shank including a proximal region (Fig. 8), a distal region (Fig. 8), and a thread (Fig. 8, ref. 30) disposed externally for threaded engagement with

bone and restricted to the distal region (Fig. 8), and a head (Fig. 8, ref. 45) connected to the shank and spaced from the thread by the proximal region (Fig. 8). The step of selecting a bone screw includes a step of selecting a bone screw in which the head is generally frustoconical in shape (Fig. 8). The step of selecting a bone screw includes a step of selecting a bone screw in which the shank defines a long axis, wherein the head has a maximum diameter, wherein the head has an axial length that is measured parallel to the long axis, wherein the head has an aspect ratio defined by the axial length of the head relative to the maximum diameter of the head, and wherein the aspect ratio is at least 1:1 (Fig. 8). At least one shoulder flares generally toward the direction of advancement into bone (Fig. 8).

Lahille et al. disclose a method of compressing a bone with a bone screw, comprising: forming a hole in the bone (Fig. 8); selecting a bone screw (Fig. 8) having a shank (Fig. 8, ref. 31) and a head (Fig. 8, ref. 45) connected to the shank (Fig. 8). The step of forming a hole includes a step of forming a bore and a counterbore (Fig. 3), and wherein the step of advancing disposes the head and the shank at least substantially in the counterbore and the bore, respectively (Fig. 3)(Fig. 8). The step of forming a hole is performed by the step of advancing (Fig. 8). The portion of the bone near the head and the portion of the bone near the shank are separated by a fracture in the bone (Fig. 8). Each shoulder flares radially outward, generally toward the direction of advancement into bone (Fig. 8).

Lahille et al. disclose a method of compressing a bone, comprising: selecting a bone screw (Fig.8) including a shank (Fig. 8, ref. 31) including a thread (Fig. 8, ref. 30)

disposed externally for threaded engagement with bone, the shank defining a long axis and a direction of advancement into bone (Fig. 8), and a head connected to the shank (Fig. 8, ref. 45).

Lahille et al. do not disclose a plurality of shoulders disposed at spaced positions generally along the head, each shoulder ledge structure facing generally toward the direction of advancement and extending partially or completely around the head to define a respective plane disposed orthogonally to the long axis; and installing the bone screw in a bone such that a portion of the bone near the head is engaged by two or more of the shoulders ledge structures and is urged toward a portion of the bone near the shank. The step of selecting a bone screw includes a step of selecting a bone screw in which the shoulders are formed by a plurality of ridges, a plurality of grooves, or both. The step of selecting a bone screw includes a step of selecting a bone screw in which one or more of the plurality of shoulders ledge structures extend in a closed loop corresponding to a circle. The step of selecting a bone screw includes a step of selecting a bone screw in which the head includes a plurality of steps defined by stepwise decreases in the diameter of the head, and wherein the plurality of shoulders ledge structures are included in the plurality of steps. Lahille et al. do disclose a threaded portion on the head (column 9, lines 33-38) that is used to apply a compressive force to bone (column 11, lines 26-67)(column 12, lines 1-5).

McTighe et al. disclose a device used in orthopedic surgery (abstract) that comprises a portion (Fig. 1, near ref. 34) which comprises a plurality of shoulders that

extend around the device (Fig. 1, ref. 34), the shoulders being used to provide rotary stability, to stimulate bone growth, and to cause compression (column 4, lines 46-62).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have substituted a threaded portion on the head as taught by Lahille et al. with shoulders as taught by McTighe et al. in order to achieve the predictable result of compression. Furthermore, the device of Lahille et al. would gain the additional benefits of rotational stability and stimulation of bone growth (column 4, lines 46-62).

Lahille et al. in view of McTighe et al. disclose the claimed invention except for the shank and the head being both part of the same monolithic structure. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have constructed the shank and the head of Lahille et al. in view of McTighe et al. as part of the same monolithic structure, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Response to Arguments

Applicant's arguments with respect to claims 5-9, 11, 13-15, 17-26, 28 and 31-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Application/Control Number:
10/712,202
Art Unit: 3733


Page 7

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Cumberledge whose telephone number is (571) 272-2289. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on (571) 272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLC



JERRY CUMBERLEDGE
EXAMINER